

# **64K S100 MEMORY BOARD**

**"JAWS"**

## **ASSEMBLY INSTRUCTIONS**

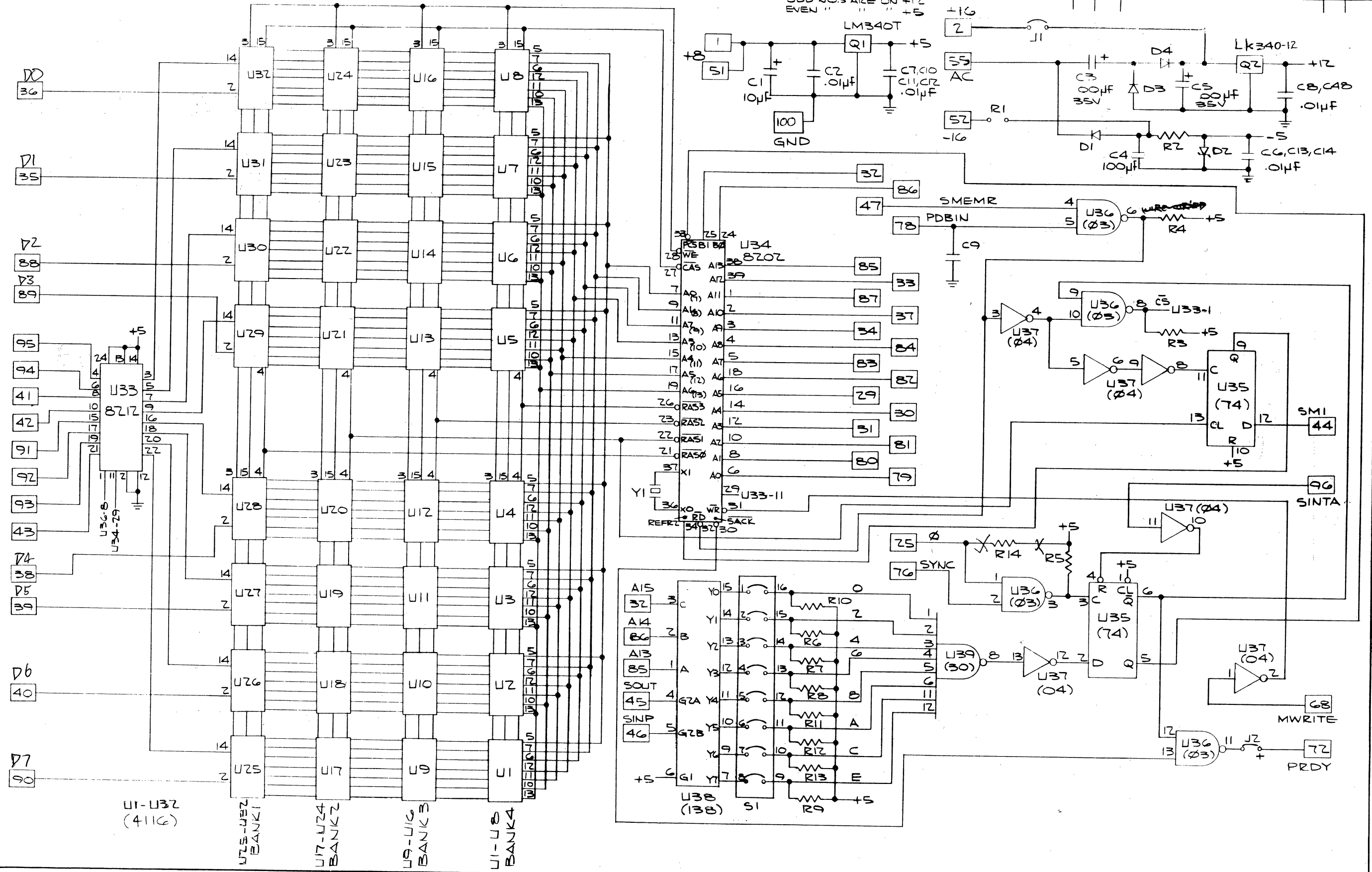
FOR MODELS 6416 - 16K KIT  
6432 - 32K KIT  
6448 - 48K KIT  
6464 - 64K KIT  
16EXP - 16K EXPANSION KIT



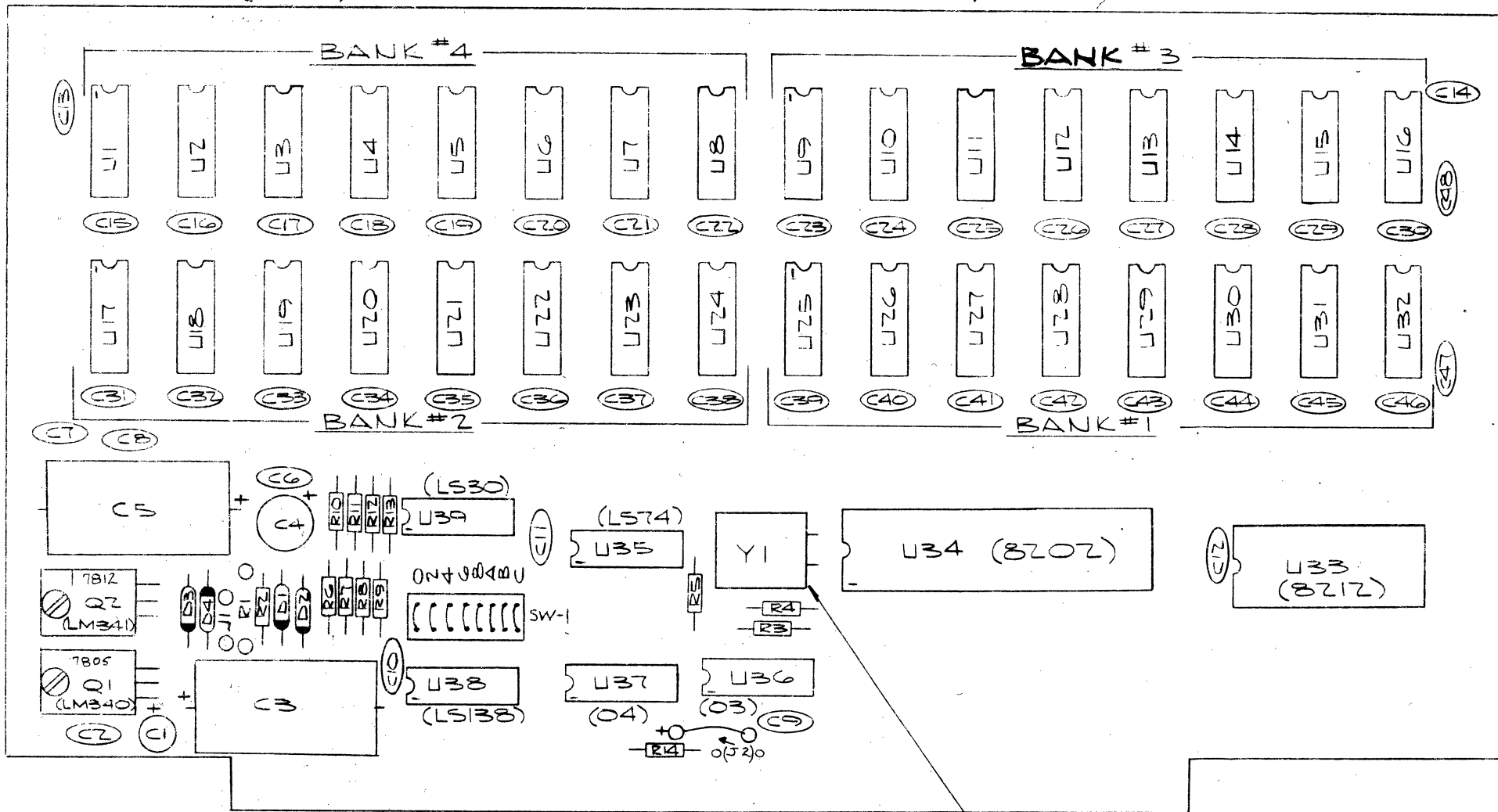
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DWG NO		REVISION				DATE	APPD
REV	EN	DESCRIPTION					

NOTE: C15-C47 ARE .01μF  
 ODD NOS ARE ON +12  
 EVEN " " " +5



U1 - U32 (2116)



INSULATE UNDER YI

64K S100 MEMORY BOARD  
ASSEMBLY INSTRUCTIONS

Please check all components against the parts list below.

DESCRIPTION	QUANTITY PER KIT TYPE				
	64/16	64/32	64/48	64/64	16K Expander
IC D8202	1	1	1	1	
IC 8212	1	1	1	1	
IC 74LS03	1	1	1	1	
IC 74LS74	1	1	1	1	
IC 74LS30	1	1	1	1	
IC 74LS138	1	1	1	1	
IC 74LS04	1	1	1	1	
IM 340T-5 (7805) Regulator	1	1	1	1	
IM 340T-12 (7812) Regulator	1	1	1	1	
IC 4116 (or Netronics #26260596)	8	16	24	32	8
Diode IN4001	3	3	3	3	
Diode IN4733	1	1	1	1	
Crystal 18.4320	1	1	1	1	
Resistor 4.7K (Yellow, Violet, Red)	12	12	12	12	
Resistor 200 ohm (Red, Black, Brown)	1	1	1	1	
Resistor 470 ohm (Yellow, Violet, Brown)	1	1	1	1	
Capacitor 1000 uf Electrolytic	2	2	2	2	
Capacitor 100 uf Electrolytic	1	1	1	1	
Capacitor 10 uf Electrolytic	1	1	1	1	
Capacitor 100pf Disc	1	1	1	1	
Capacitor .01 Disc	19	27	35	43	8
PC Board	1	1	1	1	
Socket 40 Pin	1	1	1	1	
IC Socket 24 Pin	1	1	1	1	
IC Socket 16 Pin	9	17	25	33	8
IC Socket 14 Pin	4	4	4	4	
Instruction Book	1	1	1	1	1
6/32 x 3/8" Screw	2	2	2	2	
6/32 Nut	2	2	2	2	

INTRODUCTION

READ THIS BEFORE STARTING ASSEMBLY

Before attempting to assemble this board, please read this section carefully. Mistakes can be very costly. If you have purchased more than one 16K block DO NOT install more than one 16K block at a time. This even includes sockets for the additional memory. This precaution is necessary to simplify trouble shooting in the event of any difficulties.

The 64K memory board memory section is divided into four banks. Bank #1 is addressed between 0000 and 3FFF. Bank #2 is addressed between 4000 and 7FFF. Bank #3 is addressed between 8000 and BFFF. Bank #4 is addressed between C000 and FFFF. These addresses are not switchable. A decision is required now as to which bank you will install the first 16K. After that decision has been made proceed to the assembly instructions.

REFUND POLICY: No refunds are made on kit products which have been assembled by the customer. Refer to the Limited Warranty section for the schedule of additional service fees which are available in the event of difficulty.

ASSEMBLY INSTRUCTIONS (Refer to Assembly Drawing)

- ( ) 1. Install 40 pin IC socket at location U34. Solder.
- ( ) 2. Install 24 pin IC socket at location U33. Solder.
- ( ) 3. Install four 14 pin IC sockets at locations U35, U36, U37, and U39. Solder.
- ( ) 4. Install a 16 pin IC socket at location U38. Solder.
- ( ) 5. Install eight 16 pin IC sockets in the bank selected in the introduction. Solder.
- ( ) 6. Install regulator IM340T-5 (7805) at location Q1. Solder. (Use 6/32 screw and nut).
- ( ) 7. Install regulator IM340T-12 (7812) at location Q2. Solder. (Use 6/32 screw and nut).
- ( ) 8. Install crystal Y1 as shown. Solder. Wrap a piece of electrical tape around crystal body to avoid crystal case shorting foil pattern on PC board.
- ( ) 9. Install 200 ohm resistor R2 (red, black, brown). Solder.
- ( ) 10. Install 4.7K ohm resistors R3-R14 (yellow, violet, red). Solder.
- ( ) 11. Install zener diode D2, IN4733, in the direction shown. Solder.
- ( ) 12. Install capacitor C1, 10uf Electrolytic. Note polarity. Solder.
- ( ) 13. Install .01 disc capacitors C2, C6, C7, C8, C10, C11, C12, C13, C14, C47, C48. Solder.
- ( ) 14. Note that each of the 4116 memory IC's has one disc capacitor. Depending on the bank that you selected, install the eight remaining .01 disc capacitors at these locations.
- ( ) 15. Install capacitor C4 100uf. Note polarity. Solder.
- ( ) 16. Install capacitor C9 100pf. Solder.
- ( ) 17. Install jumper J2. Note that the holes for this jumper are just above the nomenclature J2 on the board. See the assembly drawing for clarification.
- ( ) 18. Provision is made for an 8 position dip switch at location SW-1 (not supplied). These jumpers are 8K block enables which allows disabling any 8K portion of a 16K bank. To enable a specific bank a jumper or switch closure must be installed. For example, if the memory is installed in bank #1 a jumper at S1-0 will enable the memory from 0000 to 1FFF. A jumper at S1-2 will enable memory from 2000 to 3FFF, etc.

- ( ) 19. The remaining components and jumpers require a decision as to the power supply being used. If this board is being used in a S100 bus where  $\pm 16V$  are available, install jumper J1 and resistor R1 (470 ohm, yellow, violet, brown). Solder. Skip step #20.
- ( ) 20. If you are using the Netronics power supply do not install J1 or R1. The AC input is used to generate the +12 and -5V voltages required. Install diodes D1, D3 and D4 (IN4001), and C3, C5 (1000uf capacitors). Note the polarity on the 1000uf capacitors and diodes.
- ( ) 21. Before placing any IC's into their sockets install the board into your S100 bus. Measure the voltages at the output of Q1, Q2 and D2. These voltages should be +5V, +12V and -5V respectively. If these voltages are not correct do not proceed as you will surely cause damage to expensive components.
- ( ) 22. If you are installing the board into an Explorer 85 equipped with a Netronics AP-1 power supply connect the AC terminal on the power supply to the AC input terminal on the Explorer mother board. Remove resistor R229 on the Explorer mother board and replace with an insulated jumper. This modification will supply the necessary voltage to power the 64K board.
- ( ) 23. Now install the IC's as shown in the assembly drawing. Note the position of pin #1. IC's installed backwards will be destroyed.
- ( ) 24. Power up your system and test.
- ( ) 25. You are now ready to install the additional 16K banks--one at a time please. Install the IC sockets, eight .01 capacitors, the appropriate S-1 jumpers or dip switch, and finally the 4116 IC's. Again remember pin #1. Refer to assembly drawing.

S-1 JUMPER	8K PAGE SELECTED
0	Selects Memory 0000 to 1FFF
2	Selects Memory 2000 to 3FFF
4	Selects Memory 4000 to 5FFF
6	Selects Memory 6000 to 7FFF
8	Selects Memory 8000 to 9FFF
A	Selects Memory A000 to BFFF
C	Selects Memory C000 to DFFF
E	Selects Memory E000 to FFFF